IN THE CLAIMS:

Please amend the claims as follows:

1. (Previously Presented) A plasma processing apparatus for processing an object to be processed using a plasma, comprising:

a processing chamber defining a processing cavity for containing an object to be processed and a process gas therein;

a microwave radiating antenna having a microwave radiating surface for radiating a microwave in order to excite a plasma in the processing cavity; and

a dielectric body provided so as to be opposed to the microwave radiating surface;

wherein a distance D between the microwave radiating surface and a surface of the dielectric body facing away from the microwave radiating surface, which is represented with a wavelength of the microwave being a distance unit, is determined to be in a range satisfying an inequality

$0.7\times n/4 \leqq D \leqq 1.3\times n/4$ (n being a natural number);

whereby a standing wave of the microwave is formed between the microwave radiating surface and a plasma exciting surface, thereby exciting a plasma at the plasma exciting surface by being supplied with energy from the standing wave of the microwave, the plasma exciting surface substantially coinciding with the surface of the dielectric body facing away from the microwave radiating surface.

2. (Currently Amended) A plasma processing apparatus as claimed in claim 1, in which the distance D is determined to be in a range satisfying an inequality

~~$0.7\times 2k/4 \leqq d \leqq 1.3\times 2k/4$~~ $0.7\times 2n/4 \leqq D \leqq 1.3\times 2n/4$ (~~k~~ n being a natural number).

3. (Original) A plasma processing apparatus as claimed in claim 1, in

which the dielectric body is a plate-shaped member disposed in such a manner that a distance between the dielectric plate and the plasma radiating surface is substantially zero, and a thickness d of the dielectric plate represented with the wavelength of the microwave being a distance unit is determined to be in a range satisfying an inequality.

4. (Currently Amended) A plasma processing apparatus as claimed in claim 3, in which the thickness d is determined to be in a range satisfying an inequality

~~$0.7\times 2k/4 \leq d \leq 1.3\times 2k/4$~~ $0.7\times 2n/4 \leq d \leq 1.3\times 2n/4$ (~~k~~ n being a natural number).

5. (Previously Presented) A plasma processing apparatus as claimed in claim 1, in which

the microwave radiating antenna is a radial line slot antenna having a number of slots formed and distributed in the microwave radiating surface thereof for radiating the microwave.

6. (Currently Amended) ~~A~~ The plasma processing apparatus according to claim 1, ~~for processing an object to be processed using a plasma, comprising:~~

~~a processing chamber defining a processing cavity for containing an object to be processed and a process gas therein;~~

~~a microwave radiating antenna having a microwave radiating surface for radiating a microwave in order to excite a plasma in the processing cavity; and~~

~~a dielectric body provided so as to be opposed to the microwave radiating surface;~~

wherein the microwave radiating antenna is a radial line slot antenna having a number of slots formed and distributed in the microwave radiating surface thereof for

radiating the microwave, the number of the slots being [are] concentrically arranged in the microwave radiating surface; and

wherein one per six or three slots in the peripheral direction of the slots arranged in the outermost peripheral part are closed so as to uniformize, in a plane, the plasma generated in the processing cavity.

7. (Previously Presented) A plasma processing method for processing an object to be processed using a plasma, comprising the steps of:

putting an object to be processed and a process gas into a processing cavity defined in a processing chamber;

radiating a microwave for exciting a plasma from a microwave radiating antenna having a microwave radiating surface to the processing cavity;

providing a dielectric body so as to be opposed to the microwave radiating surface; and

determining a distance D between the microwave radiating surface and a surface of the dielectric body facing away from the microwave radiating surface, which is represented with a wavelength of the microwave being a distance unit, to be in a range satisfying an inequality

$0.7\times n/4 \leqq D \leqq 1.3\times n/4$ (n being a natural number),

whereby a standing wave of the microwave is formed between the microwave radiating surface and a plasma exciting surface, thereby exciting a plasma at the plasma exciting surface by being supplied with energy from the standing wave of the microwave, the plasma exciting surface substantially coinciding with the surface of the dielectric body facing away from the microwave radiating surface.

8. (Currently Amended) A plasma processing method as claimed in claim 7, in which the step of determining the distance D includes a step of determining the

distance D in a range satisfying an inequality

~~0.7×2k/4 ≤d≤1.3×2k/4~~ 0.7×2n/4 ≤D≤1.3×2n/4 (~~k~~ n being a natural number).

9. (Previously Presented) A plasma processing apparatus as claimed in claim 5, in which

a part of the number of slots is closed so as to uniformize, in a plane, the plasma generated in the processing cavity.

10. (Cancelled)

11. (Cancelled)

12. (Previously Presented) A plasma processing method as claimed in claim 7, in which

the microwave radiating antenna is a radial line slot antenna having a number of slots formed and distributed in the microwave radiating surface thereof for radiating the microwave.

13. (Previously Presented) A plasma processing method as claimed in claim 12, further comprising:

a step of closing a part of the number of slots so as to uniformize, in a plane, the plasma generated in the processing cavity.

14. (Previously Presented) A plasma processing method as claimed in claim 13, wherein the number of the slots are concentrically arranged in the microwave radiating surface; and

wherein the step of closing the slots includes the step of closing one per six or

three slots in the peripheral direction of the slots arranged in the outermost peripheral part.

15. (Cancelled)